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THE DIAGNOSIS OF PUDENDAL LESIONS*

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The great difficulty in making a clinical diagnosis of pudendal lesions is generally admitted. The multiplicity of lesions in some venereal diseases, the great variety of infections, and the frequent occurrence of mixed infections in this comparatively small anatomical region are sufficient reasons to account for the frequent failure of the clinical methods. A history of an infective intercourse cannot always be obtained because of the inability or the unwillingness of the patient to account for his sexual activities. A physical examination of the lesion, its color, consistency, and structural characteristics, will enable us only in the most typical cases to make a correct diagnosis.

Laboratory methods have therefore been employed for many years in conjunction with the clinical judgment in order to solve these difficult diagnostic problems. There are two distinct ways in which the clinico-pathological laboratory can aid us in the recognition of pudendal lesions. The causative agent may be detected by microscopic study of a smear from the lesion or by cultural methods; and the presence of a specific local or systemic reaction may be observed by the serological, immune biological or histological methods. A combination of such methods employed routinely will enable us to accurately determine the etiology of many pudendal lesions and sometimes lead to the discovery of valuable facts such as mixed

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infections or a previous disease of the genital organs which may influence considerably the character of the present lesion.

The great value of the clinico-pathological laboratory for the correct diagnosis of pudendal lesions is at the present time not sufficiently recognized by the medical profession and the public health authorities, and many venereal clinics or similar institutions do not take advantage of the help offered by the laboratory.

The important role the latter plays in the diagnosis of pudendal lesions could be demonstrated by a series of 800 consecutive pudendal lesions, referred to us without clinical diagnosis and studied solely by employing laboratory methods. 507 of these were clinically acute lesions of the genitalia, mostly ulcerations covered with more or less copious purulent exudate or suppurative inguinal bubo. 317 were "chronic" lesions showing a varying amount of granulation tissue with or without secondary ulceration.

The following methods were routinely applied in the laboratory diagnosis of every pudendal lesion: A superficial smear and a deep scraping were taken and slides were examined under the dark-field illumination and stained after the method of Gram, Wright, Ziehl-Neelsen, and Fontanna. Cultures were made in brain broth (Rosenau media) and on blood agar under reduced oxygen tension. Blood was taken for a complement fixation test, a precipitation reaction for syphilis, and a complement fixation for gonorrhea, and each patient was given the intracutaneous tests for lymphogranuloma inguinale and chancroid. From many "chronic" granulomatous lesions a small biopsy was taken. With these methods we were able to recognize the etiological factor in 89.5% of the referred lesions. In 75% of the cases the group of recognized venereal diseases (Stannus) could be diagnosed, while 12% proved to be nonvenereal infections. In 10.5% of our series, which could not be recognized by our diagnostic laboratory methods, even expert clinical examination by experienced specialists failed equally to provide a satisfactory diagnosis. These lesions represented usually progressive ulcerative processes of long duration with some tissue proliferation and more or less severe mutilation of the external genitalia. Clinically they often resembled carcinoma of the penis or the vulva, although a biopsy failed in every instance to demonstrate a malignant growth, and glandular metastases never could be observed. The possibility that these lesions are produced by a group of rare bacterial infections such as the paratyphoid or dysentery bacillus, or the Loeffler bacillus and the pathogenic diphtheroids which could not be demonstrated by our insufficient bacteriological methods must be kept in mind.

The recognition of a group of definitely nonvenereal lesions of the pudenda is important. They may be spontaneous, pyogenic, saprophytic, or parasitic infections or follow trauma sustained during sexual intercourse. In 10 lesions the application of caustic antiseptic to the genitalia could be later elicited as the primary cause. Clinically it is extremely difficult to differentate these lesions from those caused by venereal infections. Our laboratory diagnosis of this type of lesion was based primarily upon the possibility of excluding a venereal infection, which was followed by the discovery of the nonvenereal causative agent. Although our opinion was often contrary to the clinical judgment, we did not have to rescind our diagnosis based upon the laboratory methods in a single case.

The group of venereal diseases present in our series of pudendal lesions includes syphilis, gonorrhea, chancroid, Vincent's infection, granuloma inguinale, and lymphogranuloma inguinale. Syphilis, justly the most emphasized and feared venereal disease, was present only in 16%. The finding of the Spirocheta pallida in the dark-field or the smear stained with Fontana's method is the only fool-proof evidence upon which the diagnosis of a primary luetic chancre can be made. In secondary and early tertiary syphilitic lesions of the external genitalia the serological examination can be always relied upon. In cases of doubt, the histopathological picture of the syphilitic granulation tissue is very characteristic. In instances where the local and the serological examination are negative, syphilis can be safely excluded as the etiological factor of the lesion present.

Gonococcal infections are of comparatively little importance in the etiology of pudendal lesions. The thickly coated mucous membrane of the external genitalia is very resistant to the invasion of bacteria. Only occasionally have we observed erosions around the urethral orifice or in form of a mild balanitis in which the gonococcus was the causal factor. More frequent observed consequences of the irritative effect of gonorrheal discharge are the pointed or wartlike condylomas which are found around the vulva and anus or on the penis, although they must not be regarded as a specific gonorrheal granuloma. The laboratory diagnosis of gonorrhea rests upon the demonstration and culture of the organism from the lesion and the demonstration of specific immune bodies by the complement fixation test and the allergic skin reaction.

Chancroid, one of the most common venereal infections of the genitalia, was present in 25% of our cases. In acute lesions the Ducrey bacillus could be easily demonstrated in the discharge from the ulcer or in the pus from the regional lymph glands. In the chronic lesions, the Ducrey bacillus can be found only with difficulty

since it is usually outnumbered by other bacteria. There the skin test of Dmelcos performed with a heat-killed suspension of the streptobacillus cultivated under decreased oxygen tension has proven to us an extremely valuable aid in the diagnosis.

Lymphogranuloma inguinale was seen by us in 25% of pudendal lesions. This astounding number can be explained by the fact that the disease is endemic and widespread among the colored population of New Orleans. The isolation of the virus by animal inoculation from the primary lesion is difficult, and because of its evanescent nature, primary lesions are rarely observed. The isolation of the virus from the pus of the bubo is possible in acute cases without mixed infection. The best and easiest way of diagnosing the disease is by means of the intracutaneous skin test of Frei. If negative, it will with a high percentage of accuracy exclude lymphogranuloma inguinale as the etiological factor. If positive, not so much reliance should be placed upon the test since it may just record a previous, already healed infection. In these instances only recovery of the virus from the lesion or the study of the characteristic cellular response by means of a biopsy will be of absolute diagnostic value.

Granuloma venereum and fuso-spirochetosis of the genitalia are the two venereal infections whose diagnosis is often possible by laboratory methods. The finding of Donovan bodies in the smear and tissue from the lesion of granuloma venereum, and the appearance of the characteristic spirochetes and fusiform bacilli in cases of fuso-spirochetosis of the genitalia will disclose the true etiological agent of both rather uncommon venereal infections. For the demonstration of Donovan bodies a deep scraping stained with Wright's stain is useful, while the characteristic flora of Vincent's infection can be observed under the darkfield, or better, on a slide stained with the silver impregnation method of Fontana.

Summarizing our results we can therefore state:

1. A series of 800 consecutive lesions of the pudenda was studied. By employing routine laboratory methods a diagnosis could be made in 89.5 per cent of the cases.

2. One out of every 5 cases of pudendal lesions in our series was caused by some nonvenereal, known or unknown, etiological agent.

3. Among the group of recognized venereal diseases syphilis

ranked third in importance in the group of acute ulcerative lesions and second in the group of chronic granulomas of the pudenda.

4. Clinical methods are unable to differentiate successfully between venereal and nonvenereal infections and incline to overemphasize syphilis as the etiological factor of pudendal lesions.

5. A comparison of the methods for the diagnosis of pudendal lesions studied in a series of 800 consecutive cases demonstrated the superiority of the laboratory methods.

MINERAL METABOLISM*

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I. Functional Importance of Minerals.

The importance of minerals was brought to the attention of the medical world by the work of Sidney Ringer in 1882. He attempted to find a purified perfusion fluid which would keep an isolated heart beating as regularly as when perfused with blood plasma. In distilled water, the heart stopped beating. He next tried sodium chloride, and found that in this solution, even when isotonic to blood plasma, the heart muscles rapidly lost their irritability and power of contraction. But, in a solution of sodium, potassium and calcium chlorides in the same proportions as these salts exist in the blood plasma, the heart kept beating regularly for hours. This is one of the first experiments in which evidence was produced showing that the correct balance of salts in the blood and tissues is necessary for life.

Man is dependent on his food intake for meeting mineral requirements. If the diet is adequate, a normal adult will remain in mineral balance. That is, during twenty-four hour periods, under these normal conditions, the intake and output will balance each other. In normal infants and children, there is retention of salts due to the demands of growth. In many pathological conditions, or when there is a deficiency in the diet, the mineral balance is upset, and in such cases, metabolism studies are of great value. For these studies, it is necessary to measure and analyze the food (intake) and the urine and stool (output) for the desired elements.

In addition to carbon, hydrogen, oxygen and nitrogen, the elements present in the living organism and definitely concerned with its functioning are calcium, potassium, phosphorus, sulphur, chlorine, sodium, magnesium, iodine and iron. The last two named elements exist in the body in organic combinations; iron in the hemoglobin of the red cells, and iodine in thyroxin and iodothyroglobulin in the thyroid gland. The other elements exist in the body fluids chiefly in the form of ions. This is generally true also in the tissues, except in bone, which has a predominance of solid inorganic salts.

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The important basic ions, or cations, are Na^+ and K^+ (monovalent), and Ca^{++} and Mg^{++} (divalent); the important acidic ions, or anions, are Cl^-, HCO_3^- and $H_2PO_4^-$ (monovalent), and $SO_4^=$ and $HPO_4^=$ (divalent). In all the tissues and fluids of the body, these ions are present in such proportions that the total osmotic pressure is approximately uniform, although the relative concentrations vary. In tissue cells, potassium and phosphate predominate, whereas in plasma and the extracellular fluids, sodium and chlorine are the outstanding elements. In the red blood cells, potassium is practically the only basic constituent. Moreover, there seems to be an optimum range for each individual base and acid which the organism strives to maintain in each fluid and tissue. Under normal conditions, this concentration is maintained.

The total ionic content of blood plasma is normally a well-defined constant, and the pH of blood is kept between 7.3 and 7.5. There are various mechanisms working to preserve this acid-base balance. For instance, if hydrochloric acid is lost by vomiting, it is replaced by bicarbonate, keeping the total ionic content constant. Also, hemoglobin and the carbonates and phosphates act as buffers. The kidneys play an important role in maintaining the acid-base balance. They conserve the alkalinity of the blood by excreting neutralized weak acids into the urine as free acids, by the excretion of alkaline phosphate as acid phosphate, by the excretion of excess bicarbonate, and by the conversion of neutral urea into ammonia.

Calcium should be mentioned particularly because of its role in the formation of bone, which consists largely of a complex compound of calcium carbonate and calcium phosphate. The calcium content of blood is kept within very narrow limits, from 9 to 11 mgs. per 100 cc. A faulty ratio of calcium to phosphorus in the diet, the lack of vitamin D, or hypofunction of the parathyroid glands results in rickets, a state in which there is incomplete calcification of bone. In one form of rickets, the blood calcium is low and the phosphorus high; in another type of the same disease, the calcium is found in normal concentrations, but the phosphorus is low. Tetany often results when the blood calcium falls below 8 mgs. per 100 cc. However, there are cases of tetany when the calcium is above this level, presumably due to relative lack of ionizable calcium. Other bone diseases are also accompanied by unusual calcium levels.

This brief review of some of the fundamental principles of mineral metabolism indicates how important it is to have accurate and reliable methods of analysis. Such methods are indispensable as an aid to diagnosis, in following treatment, and in the study of mineral salts in the body under various conditions.

II. Determination of Minerals in Biological Materials.

Preparation of Ash Solutions.—Before considering the methods for the quantitative estimation of mineral elements in biological materials, it is necessary to point out certain differences in the preparation of blood, urine, stool, diet and tissue before the analysis can be run. Generally speaking, the main procedure is an oxidation in order to have all elements in the inorganic state. In solid materials this is preceded by a drying process, as figures are usually reported on dry weights.

In the analysis of blood for calcium, magnesium, nitrogen and potassium, determinations are run directly on serum. Chloride determinations are usually run on the whole blood protein-free filtrate, while for inorganic phosphorus, the proteins are precipitated from serum. Preliminary ashing of serum is required for the determination of sodium and of total base.

Urine analysis requires a rather large specimen, at least one hundred cc., which is evaporated down to a small volume, and then oxidized completely with concentrated nitric acid in a quartz crucible. This ash solution is used for all mineral determinations except nitrogen and chlorine, which are run directly on the original urine specimen.

The preparation of solid materials, such as stool, tissue and food stuffs, is much more elaborate. First, moisture is removed, and if desired, also measured in the process by weighing before and afterwards. Water is removed by drying in a vacuum desiccator to a constant weight, but fresh tissues must first be frozen to prevent autolysis. When dry, the specimen is powdered and mixed.

Fat may be removed as the next step. This is done only when information concerning the fat content is desired, or when there is so much fat present that it would interfere with preparing a homogeneous sample of the specimen. The usual method is continuous ether extraction, using a Soxhlet extractor.

The next step is ashing, of which there are three types: wet ashing, dry ashing and alkaline dry ashing. Wet ashing is usually done with concentrated nitric acid in a quartz crucible. The material is weighed out, and the acid added little by little until the contents are liquid, and foaming has ceased. Then the crucible is covered with a quartz lid and placed on a steam bath, more acid being added as needed. For complete ashing to a clear, bright yellow solution, about one week is required for urine and tissue specimens, and one month for stool and diet specimens. When finished, the solution is

allowed to cool, and is then diluted to a convenient volume in a volumetric flask. This type of ash solution can be used for all mineral determinations except nitrogen and chlorine, which are run directly on the original dried sample.

Dry ashing takes less time, but the objection to this method is that the final solution cannot be used for either phosphorus or sulphur determinations. The sample is weighed in a quartz or platinum crucible and put in a muffle furnace for two or three days until the ash is white or grayish white. The temperatures should be raised slowly, to prevent the carbonized material from frothing over, and should never go above 500° C. When complete, the ash is dissolved in dilute hydrochloric or nitric acid, and made up to volume.

Alkaline dry ash is used for the determination of chlorine (in cases where this cannot be run directly, as in the analysis of bone), phosphorus and sulphur. The procedure is the same as for plain dry ashing, except that the specimen is covered with sodium carbonate. Such an ash solution cannot be used for determinations of sodium or of total base.

Analytical Methods.—For the determination of *Calcium* we use a modification of the Kramer-Tisdall method (1). The principle is the same whether it is run on ash solution or on blood serum. However, the ash solution must first be neutralized to methyl red. Then the calcium is precipitated as calcium oxalate,

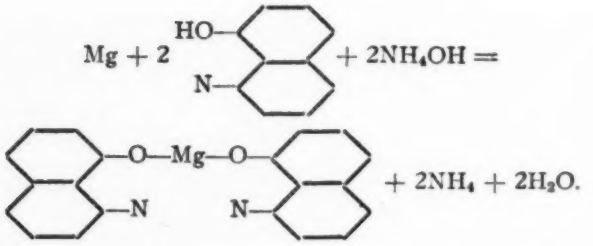
$$CaCl_2 + (COOH)_2 = (COO)_2Ca + 2HCl,$$

the precipitate filtered off,* washed with weak ammonia, dissolved in sulfuric acid, and the resulting oxalic acid is titrated with standardized 0.01 normal potassium permanganate, according to the equation

$$5(COO)_2Ca + 2KMnO_4 + 8H_2SO_4 = 5CaSO_4 + K_2SO_4 + 2MnSO_4 + 8H_2O + 10CO_2.$$

The method of Greenberg and Mackey (2, 3) is used for *Magnesium* determinations. Calcium is an interfering substance and must be removed. Therefore, we use the same aliquot of ash solution as for the estimation of calcium, saving the filtrate for the magnesium analysis after the calcium oxalate has been filtered off. The magnesium is precipitated with 8-hydroxyquinoline in a strongly ammoniacal solution in the presence of ammonium chloride. The reaction is—

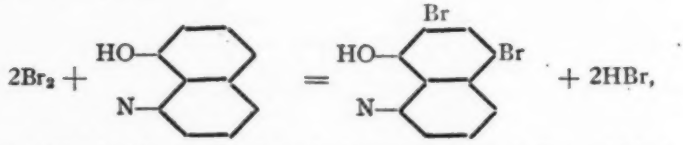
* Whereas, with blood serum, it is centrifuged.



The magnesium hydroxyqinolate is filtered off and washed, and then dissolved in hot concentrated hydrochloric acid. The following bromometric procedure is carried out in an iodine flask. First potassium bromide and potassium bromate are added to the acid solution. They react thus to produce bromine—

$$BrO_3^- + 5Br^+ + 6H^+ = 3Br_2 + 3H_2O.$$

When brominization of the hydroxyqinoline is completed, according to the reaction—



potassium iodide is added, and the excess free iodine which is formed is back-titrated with sodium thiosulfate.

For *Sodium*, the method of Barber and Kolthoff (4) as modified by Butler and Tuthill (5) is very satisfactory. First phosphates are removed with calcium hydroxide. The mixture is filtered, the filtrate evaporated to dryness, and then the residue dissolved in a little dilute hydrochloric acid. Saturated uranium zinc acetate solution is added, which precipitates the sodium quantitatively as sodium uranium zinc acetate. The precipitate, $(UO_2)_3ZnNa(CH_3COO)_9 .6H_2O$, is filtered off in a weighed Jena glass filter crucible, washed, desiccated and weighed.

Potassium is precipitated as potassium sodium cobaltinitrite. There are several methods based on this reaction:

$$Na_3Co(NO_2)_6 + 2KCl = K_2NaCo(NO_2)_6 + 2NaCl.$$

We use a procedure of Fiske's which has not been published. The

aliquot of ash solution or blood serum is dried by evaporation, re-ashed with aqua regia, and then the sodium cobaltinitrite is added. The precipitate is filtered off, washed, and ashed by ignition. This oxidizes the potassium sodium cobaltinitrite to potassium oxide, which is then dissolved through the filter with hot alcohol, and precipitated with tartaric acid, thus:

$$K_2O + 2\begin{matrix}CHOHCOOH\\|\\CHOHCOOH\end{matrix} = 2\begin{matrix}CHOHCOOK\\|\\CHOHCOOH\end{matrix} + H_2O.$$

The resuting potassium tartrate is filtered off, washed with absolute alcohol, dissolved in water and titrated with standard 0.02 normal sodium hydroxide. The equation for the final titration is—

$$\begin{matrix}CHOHCOOK\\|\\CHOHCOOH\end{matrix} + NaOH = \begin{matrix}CHOHCOOK\\|\\CHOHCOONa\end{matrix} + H_2O.$$

For *Phosphorus,* the method of Fiske and Subbarow (6) is rapid and accurate. This is the same method that many laboratories use on protein-free blood serum, except that the volume is ten times greater. First the ash solution aliquot is neutralized, then molybdate is added, so that phospho-molybdic acid is formed. The molybdate with a valence of six is then reduced to a valence of three by the addition of amino-naphthol-sulfonic acid, the reaction being—

$$Na_2HPO_4 + 12(NH_4)_2MoO_4 = H_3PO_4.12MoO_3 + 24NH_3 + 2NaOH + 10H_2O.$$

The resulting blue color is compared with appropriate standards in the colorimeter.

For *Sulphur* the classical method is used (8). A sample is thoroughly re-ashed with nitric and hydrochloric acids, then barium chloride is added, and the precipitate of barium sulfate is filtered off, ignited and weighed. The equation for the precipitation is—

$$BaCl_2 + MgSO_4 = BaSO_4 + MgCl_2.$$

A rather large sample of material is required for this determination, so for economy, we use the filtrate for the determination of iron.

For *Iron* we employ the method of Yoe (7) in which one cc. of a dilute solution of 7-iodo-8-hydroxyquinoline-sulfonic acid is added to the clear and colorless filtrate made up to a definite volume, and the green color which develops is read against an appropriate standard at the pH which brings out the maximum color.

The Kjeldahl method for total *Nitrogen* is run directly on the

original sample, which is oxidized by heating in concentrated sulfuric acid with the aid of copper sulphate as a catalyst and potassium sulphate to raise the boiling point. After being made alkaline, the freed ammonia is steam distilled into a known amount of standard hydrochloric acid, and the excess acid is titrated with standard alkali.

For *Chlorides,* we use the well-known Volhard titration. The method for urine is that of Harvey (9). For solid materials, an alkaline digestion is first run, as suggested by Sunderman and Williams (10). Then the mixture is neutralized, and silver nitrate and then concentrated nitric acid are added. The chlorides are precipitated as silver chloride thus—

$$2NaCl + AgNO_3 = AgCl_2 + Na_2NO_3.$$

Oxidation of the remaining organic material is started by heating the mixture on the steam bath, and is completed by adding saturated potassium permanganate to the boiling mixture. After cooling, the excess silver nitrate is back-titrated with ammonium thiocyanate, using ferric alum as an indicator. The reactions involved are—

$$AgNO_3 + NH_4SCN = AgSCN + NH_4NO_3$$
$$3AgSCN + FeNH_4(SO_4)_2 = Fe(SCN)_3 + Ag_3NH_4(SO_4)_2.$$

When determinations of *Total Base* are required, we follow the method of Fiske (11). Phosphates are first removed from a neutralized aliquot of ash solution by precipitation with ferric chloride. The filtrate is acidified with sulfuric acid, which changes all the bases into the form of sulphates. The solution is evaporated, then ignited and fused with ammonium carbonate in a platinum crucible, in order to drive off excess sulfuric acid. The residue is dissolved in water, and the sulphates precipitated with benzidine chloride as benzidine sulphate. In the equation for this precipitation, B stands for base with a valence of one:

$$B_2SO_4 + C_{12}H_8(NH_2)_2.2HCl = 2HCl + C_{12}H_8(NH_2)_2.B_2SO_4.$$

The precipitate is filtered off, redissolved in water, and titrated with standardized sodium hydroxide.

In using these methods, it is always advisable to first make determinations on known solutions until proficiency is acquired. Determinations are always run in duplicate, and results are considered acceptable only when they check within satisfactory limits.

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SOME ASPECTS OF TYPHOID FEVER WORK IN THE MISSOURI STATE BOARD OF HEALTH LABORATORY

By EDNA L. SMITH, Bacteriologist

Prior to April, 1936, the Missouri Board of Health Laboratory was considerably understaffed and the volume of work was too great for the personnel to give adequate attention to all phases of work which is considered as routine in the majority of state health laboratories. Not only was the Laboratory deficient in personnel, but expensive and necessary equipment was needed badly. Early in 1936 Social Security funds were alloted to the various states by U. S. Public Health Service. The federal government permitted the use of funds for both additional personnel and the purchase of equipment.

With the advent of the Social Security funds the entire laboratory was overhauled. New personnel was added, more space was given over to the laboratory and considerable new equipment was purchased and installed. As each new person came to work various phases of the routine work were expanded and more searching attention was given to each specimen received. The chief aim of the laboratory is to employ as many reliable procedures as possible in testing for the various diseases of a public health nature, thus making our services to the medical profession of much greater value than heretofore.

Intestinal disease work probably suffered more than any other of the diseases that are a public health problem. The reason for this lay partially in the fact that no one in the laboratory was especially trained in the bacteriology of the intestinal canal, and partially due to the system employed by the doctors in sending specimen into the laboratory.

The chief tests, with reference to the intestinal diseases, which we perform at the State Health Laboratory are: (1) bacteriological examination of the stool and urine; (2) microscopic technic of agglutination; and (3) culturing the blood for the specific organisms. These tests will be considered in the order named.

Stool Examinations

The specimen container which we send out upon request is a 15 ml. capacity wide-mouthed bottle. These bottles are cleaned in bichromate-sulfuric acid cleaning solution, rinsed thoroughly in tap

then distilled water, and dried in the oven. The diluent and preservative which is placed in the bottles is a 30% solution of glycerine in saline plus enough crystals of lithium chloride to equal 0.5% of the total volume. The action of the lithium chloride is to retard the growth of colon organisms without retarding the development of pathogens. After the glycerine saline-lithium chloride solution has been placed in the bottles cork stoppers are inserted and then sterilized in the autoclave at 15 lbs. pressure for 15 minutes.

When stool specimen are received in the laboratory a generous portion of the stool in inoculated into Selenite-F enrichment broth and the culture is placed in the incubator until the next day. It would be desirable, if the work day equalled 12 hrs. to streak from the Selenite broth at the end of 8 to 10 hours, but the work day is seldom so long. The action of the medium is to lengthen the lag phase of the colon bacilli and enterococci to about 8-10 hours whereas the typhoid and paratyphoid bacilli grow rapidly from the time of inoculation—the maximum growth being reached in 20 to 30 hours. Eight to ten hours after inoculation the colon bacilli and enterococci begin to grow, but the pathogens have a head start. After the Selenite-F broth has been inoculated, two plates of Endo's Medium are streaked. This procedure is followed because of the likelihood of dysentery bacilli being present in the specimen and the sodium selenite in a concentration of 1% inhibits all dysentery bacilli. Streaks should be made on sodium desoxycholate agar without the citrate since dysentery bacilli, even the most delicate ones, grow well on this medium.

The Endo plates are incubated overnight and examined the next day for colonies that are characteristic of the typhoid-paratyphoid-dysentery group, if none are found the plates are discarded. When typical colonies are found they are usually very few in number. If moderate sized, colorless, transparent colonies are found, several are picked to Russell's double sugar agar slants and incubated until the next day. If the reaction on Russell's double sugar agar slants is typical of the typhoid-paratyphoid-dysentery group—namely, acid reaction in the butt, also gas for the Salmonella group but an alkaline reaction on the slant—then an agar slant and lactose broth in a Durham fermentation tube are inoculated and incubated overnight. If gas is not produced in the lactose broth, then the growth on the slant is used to further identify the culture by means of agglutination in the presence of specific immune sera.

After the Selenite-F broth culture has been incubated overnight, a loopful of the culture is streaked on sodium desoxycholate citrate agar plates and incubated overnight. The action of the desoxycholate citrate agar is to inhibit the growth of colon and Gram

positive organisms and to enhance the growth of the members of the typhoid-paratyphoid group and some dysentery bacilli. The best incubation period for these plates is 24 hrs. and when examined at the end of that time in the absence of members of the typhoid-paratyphoid group there may not be any evidence of growth, for the inhibitory action of both the Selenite broth and desoxycholate agar toward colon and Gram positive organisms is quite effective even though the inoculum may have been unusually large. The inoculum on sodium desoxycholate citrate agar plates may be many times greater than when using other differential media and still well-isolated colonies will be obtained. Our experience has been that only a few colon organisms overcome the inhibitory factors of this medium and they are easily differentiated from the intestinal pathogens. Some workers who use this medium for isolation of the members of typhoid-paratyphoid group do not use the Selenite-F medium, but use only the sodium desoxycholate citrate agar plates making a large initial inoculation of the plates. According to Leifson, the hydrogen ion concentration is of extreme importance in this medium and the desirable range for this work is from 7.1 to 7.5. Sodium desoxycholate has a stronger but similar action on bacteria as bile. Below a pH of 7.5 the Gram positive bacteria are inhibited, but when the pH is 7.6 or above then the enterococci begin to grow and the inhibitory principle begins to function against the Gram-negative organisms. The inhibition caused by the desoxycholate is subjected greatly to the basic medium.

The usual procedure in some State Health laboratories (specifically Alabama and New York) is to make repeated streakings on consecutive days from each specimen. This was our procedure also until we inaugurated the use of the desoxycholate and Selenite media. Our results with these media have been so favorable and other workers have lauded the media so highly that we feel reasonably certain that one complete test with these media is more conclusive than repeated tests with the other media.

If typical colonies are found on the sodium desoxycholate plates, they are picked to Russell's double sugar agar and the procedure from there is the same as if typical colonies were picked from Endo's medium plates. In the event that any culture is isolated that is not agglutinated by specific immune sera and the characteristics are typical of the typhoid-paratyphoid group then the culture is inoculated into various sugars.

In searching for pathogens in the urine the procedure followed in our laboratory is to inoculate varying amounts (from 0.2 ml. to 1 ml.) of the urine into veal infusion broth and at the same time inoculate 5 ml. of the urine into 5 ml. of double strength Selenite-F

broth and incubate overnight. The following day a loopful from each tube showing growth is streaked on the desoxycholate citrate agar plates and incubated 24 hrs. If at the end of that time the plates show typical typhoid or paratyphoid colonies, the same procedure is used as in the stool examinations—namely, onto Russell's double sugar agar slants, from there into lactose and onto veal infusion agar slants and then tested with specific antisera. If the plates do not show growth the specimen is considered finished and the report of "not found" is made.

The use of the Selenite-F enrichment broth and the sodium desoxycholate citrate agar plates has not shortened the time involved in our examination of a stool specimen, but the chances of isolating typhoid and related species are so much greater than with other differential and inhibitory media. Whenever the pathogens are found on a desoxycholate citrate plate, they are quite often nearly in pure culture and there is slight opportunity to fail in recovering them.

Macroscopic Agglutination Tests

All blood specimens which are sent into the laboratory for febrile diseases are tested for typhoid fever routinely. The doctor may specify definitely that he wishes the blood to be tested for tularemia only, or undulant fever only, but we test for typhoid just the same. Considering only the intestinal diseases we are prepared to test for B. paratyphosus A and B, B. dysenteriae Shiga, B. paradysenteriae strains Hiss Y and Flexner V in addition to B. typhosus should the doctor wish, however we do not test routinely for any intestinal diseases other than typhoid.

All antigens used in the laboratory for agglutination tests are prepared by the author. The Rawlings strain is used in preparing the B. typhosus antigen and was brought here by the author from the National Institute of Health. The same technic is used in preparing B. paratyphosus A and B and B. typhosus antigens. The strains of B. paratyphosus A and B were brought here from the National Institute of Health. All of the strains of dysentery bacilli were obtained from the Michigan Board of Health Laboratory.

Transfers from the stock culture are made onto several fresh veal infusion agar slants and incubated at 37 degrees for 24 hours. Sterile physiological salt solution is used to make an emulsion of the 24 hr. growth. The emulsion is transferred with Pasteur pipettes from the agar slants to veal infusion agar in 32 oz. Blake bottles and the bottles are rotated by hand to insure the emulsion covering the entire surface. The Blake bottles are stacked in the incubator and left for 24 hours.

Next day the growth on the agar in the Blake bottles is covered with 0.5% phenol in saline and the bottles are rotated to wash off the growth. The emulsion is pipetted out of the Blake bottles into centrifuge tubes and centrifugated at high speed for 5 minutes. The supernatant fluid is pipetted off and fresh 0.5% phenol in saline is added to the sediment in the centrifuge tubes and a rubber stopper inserted in the mouth of the tube and shaken for three minutes. Again the organisms are thrown down by high speed in the centrifuge. The washing is repeated four times. The purpose of this procedure is to wash the flagella off the organisms. The somatic portions of the cells are more important in the diagnosis of typhoid and paratyphoid fevers than the flagellar portions, whereas the flagellar portions are more important than the somatic in sera from immunized persons. After the organizsms have been washed four times enough of the 0.5% phenol in saline is added to the sediment to make a creamy emulsion. This is poured into glass stoppered bottles and stored in the cold room until needed.

The concentrated suspension is diluted to an opacity that conforms with the Silica standard of 500 million. We do not use the silica standard actually, but use a method that was devised by Edward Francis of the National Institute of Health. His method consists of diluting the stock antigen with physiological salt solution enough to be able to just read 9 point Pica type through the suspension. This particular type is used in the U. S. Public Health reports which are issued weekly.

The tests are set up in the following manner: a row of 5 tubes for each serum to be tested is set up in a large rack and 0.5 ml. saline is pipetted into each tube. Into the first tube of each series 0.4 ml. saline is pipetted, then 0.1 ml. of the serum to be tested. The resultant 1 ml. in tube No. 1 is mixed thoroughly and 0.5 ml. of it is carried over to tube No. 2, the contents of the tube No. 2 are mixed and .5 ml. of the mixture is carried over to tube No. 3, and so on until all tubes have been treated in this manner. After the dilution has been made in tube No. 5, the excess 0.5 ml. is discarded. Then 0.5 ml. of the antigen is pipetted into each tube and the rack of tubes is shaken and set in a water bath at 45 degrees C. for 2½ hours. After the incubation period in the water bath, the racks are removed to the cold room until the next morning when the tests are read, recorded and reported.

The majority of the best text and reference books in bacteriology say that a complete agglutination in dilution of 1-80 is considered diagnostic for typhoid fever. We are inclined to feel that with so large a percentage of the people being immunized, that 1-80

is too low to be considered diagnostic. We will return to this question later in the paper.

Blood Cultures

The tubes for all blood tests that we send to the doctors and health officers upon request are cleaned in bichromate-sulfuric acid cleaning solution, rinsed thoroughly in tap then distilled water and dried in the oven. After corks have been inserted the tubes are sterilized at 160 degrees C. for 1 hour in the oven. We have a large outfit that contains the broth for blood culturing of typhoid bacilli, but the outfit is bulky, has to be transported by express, and is no more efficient than the doctor sending us a specimen of blood in a small tube and allowing us to culture it.

When specimen are received in the laboratory they are numbered and the clots are thrown down in the centrifuge. The serum is removed aseptically with sterile Pasteur pipettes into marked tubes and set aside to be used in the agglutination tests later. The clots are minutmised with sterile glass tampers and then poured over into sodium desoxycholate broth in small flasks and incubated overnight.

The sodium desoxycholate broth is used in culturing blood clots for B. typhosus because of its much stronger action than bile and there are not nearly so many contaminations. If the pH is kept between 7.0 and 7.5 the Gram positive organisms are inhibited. Probably there would not be any contaminations if the percentage of sodium desoxycholate were higher, but delicate strains of B. typhosus also might be inhibited. We use the desoxycholate in 0.1% solution.

Streaks on Endo's medium are made from the blood cultures every day for four days, or until growth is obtained within the 4 day period from a culture. If growth does occur it is generally on the first streaking; however, in some few instances it might not appear until the third or fourth streaking. When growth appears on the Endo plates, transfers are made into lactose broth in Durham fermentation tubes and onto infusion agar slants and incubated. The next day if gas has not formed in the lactose broth the growth on the agar slant is emulsified and used for agglutination purposes with specific immune sera.

In case a culture does not react with the specific immune sera, a transfer is made from the lactose broth into veal infusion broth, incubated several hours and another transfer made into another veal infusion broth tube. Just before the work day is over a transfer is made from the last broth tube onto an agar slant and incubated overnight. The next day the growth on the agar slant is used for a

second agglutination test, if it does not react, then the broth culture is used to inoculate carbohydrate broths in an effort to thus identify the culture. Our experience has been that the majority of strains of B. typhosus isolated from blood cultures are agglutinated with ease in the presence of immune sera. Much greater difficulty is encountered in agglutinating recently isolated strains of B. typhosus from fecal specimen. On several occasions we have had a culture from the feces and a culture from the blood from the same patient, the blood culture would agglutinate quickly, whereas considerable manipulation was required to agglutinate the culture from the stool. We would like to go into this problem more thoroughly, but time forbids.

Summarizing, we have found that the media containing sodium desoxycholate and sodium acid Selenite are far superior in the isolation of typhoid and paratyphoid bacilli than any medium we have used before. At all times great care must be taken to maintain the pH at the proper concentration or the media will not function properly. Our results show considerable increase in the recovery of typhoid organisms from stools with this media. Blood cultures do not yield contaminants nearly so frequently as when bile broth was used.

(*This article also appears in the Missouri Medical Journal, September issue.*)

BOOK REVIEWS

PRACTICAL BACTERIOLOGY, HAEMATOLOGY AND ANIMAL PARASITOLOGY, by E. R. Stitt, M.D., Sc.D., LL.D., Rear Admiral, Medical Corps, and Surgeon General, U. S. Navy, Retired. Formerly: President National Board of Medical Examiners; Head of Department of Tropical Medicine, U. S. Naval Medical School; Associate Professor of Medical Zoology, University of the Philippines; Paul W. Clough, M.D., Chief of Diagnostic Clinic, Johns Hopkins Hospital; Associate in Medicine, Johns Hopkins University; Associate Professor of Medicine, University of Maryland; and Mildred C. Clough, M.D., formerly Fellow in Bacteriology and Instructor in Medicine, Johns Hopkins University. Ninth Edition. Pp. 961, 208 illustrations. Publishers, P. Blakiston's Son and Company, Inc., Philadelphia.

This work consists of four thoroughly written books in one. Part I deals entirely with bacteriology. The first seven chapters take up the study and identification of bacteria and include general considerations, cocci, spore-bearing bacilli, mycobacteria, corynebacteria, actinobacillus, gram-negative bacilli, spirilla and spirochaetes. The next five chapters consider diseases due to rickettsia and bartonella, filtrable viruses, bacteriology of water and milk, study and classification of moulds, immunity and hypersensitiveness and serological methods.

Part II on haematology includes three chapters on the technique of clinical blood examinations, normal and pathological blood cells and diseases of the blood.

Part III of ten chapters deals with animal parasitology. Thorough consideration is given to classification and methods, important animal parasite diseases, protozoa, flat and round worms, arachnids, insects, mosquitoes, poisonous snakes and lizards, poisonous anthropods, fish and coelenterates. The latter are interesting and one gathers on reading these chapters that here is a subject that has been scientifically neglected and it is barely possible that from certain poisonous fish and insects something of therapeutic value may be found, just as snake venom is now used in the treatment of certain conditions.

Part IV of seventeen chapters takes up pathological examinations of the various fluids and organs and includes diagnosis of infections of the ocular region, mouth, pharynx, nose, ear and teeth. Under the subheading of roentgenological examination of teeth the authors state that a negative X-ray does not exclude the presence

of a periapical infection, either present or long-standing. It is assumed that the authors mean competent X-ray diagnosis as they have been charitable in omitting the fact that many practitioners of dentistry who own X-ray equipment, although they may do excellent dental work, are not competent to properly diagnose roentgenograms of teeth, particularly the obscure or borderline cases which should have the most expert roentgenological opinion. The remaining chapters of Part IV take up the examination of sputum, pus, skin infections, cerebrospinal and serous fluids, urine, faeces, bile and gastric and duodenal contents; other chapters include the chemical examination of the blood, blood cultures, liver function tests, focal infections, the endocrine glands and food deficiency diseases. Much new material has been added in this ninth edition, many chapters have been thoroughly revised or rewritten and obsolete material has been eliminated. Symptomatology has been included where it was felt necessary for clarification of the text, where the disease is of a rare or exotic nature or for other reasons.

The authors are to be highly commended on their thorough presentation of the various subjects, on the orderly arrangement of the material and on the clear text. The book is recommended without reserve to pathologist, clinician and laboratory worker alike.

A MANUAL OF PUBLIC HEALTH LABORATORY PRACTICE, by J. R. Currie, Henry Mechan Professor of Public Health, University of Glasgow, and Contributors. Publishers, William Wood and Co., Baltimore, Md. Price $6.75.

This book is intended primarily for graduates of medicine and particularly for those who hold a D.P.H. degree. There are sections on chemistry, bacteriology, protozoology, helminthology, entomology and meteorology. Inasmuch as the reviewer is not familiar with these various phases of public health work and therefore is not competent to judge whether this is or is not a good volume I shall simply reiterate some of the author's statements in his introduction and let the reader judge whether or not the book would be of value to him.

The author states that the book is a laboratory guide and its chief interest lies in the supplementary information given on public health laboratory work.

In the section on chemistry only the simpler tests are given in detail for water, air, milk, butter, other foods and beverages and disinfectants. The sulphites and benzoates, although not considered to belong to the simpler group, are included because they are the

only preservatives permitted in food-stuffs in England. No attempt is made to give complete analytical information on chemistry from a public health standpoint.

The section on bacteriology does not include a systematic bacteriology but is designed to show how to proceed with the bacteriological diagnosis of specific infections. Standard texts on bacteriology and immunology may be needed for more complete information.

The section on protozoology is written by A. G. Mearns, B.Sc., M.D., D.P.H., Lecturer in Public Health, University of Glasgow; Helminthology by Margaret W. Jepps, M.A. Cantab., Lecturer in Public Health, University of Glasgow; and Entomology by Robert A. Staig, M.A., Ph.D., F.R.S.E., Lecturer in Zoology, University of Glasgow. In these sections the authors have assumed a less previous knowledge of the subjects on the part of the reader and have consequently presented them in a more complete and systematic manner.

The author has added the section on meteorology and, though elementary, is, in the author's opinion, more complete than other English public health courses. As a key to climatology he believes meteorology is worthy of more attention.

ABSTRACTS

RESPONSE OF GUINEA PIG BONE MARROW TO LIVER EXTRACT: E. A. Gall, Amer. Jour. Path., p. 575, July, 1937.

Guinea pigs fed a diet of oats, carrots and lettuce developed a densely cellular bone marrow with diminished maturation of the cells. Another group fed the same diet and examined after a single dose of liver extract showed marked reduction in cellular elements with greatly increased maturation.

ALPHA TYPE STREPTOCOCCI IN FOOD POISONING: W. E. Cary, G. M. Dack and E. Davison. Jour. Inf. Dis., vol. 62, No. 1, 1938, p. 88.

Report of an institutional outbreak of diarrhea in which alpha streptococci were isolated from meat, and both filtrates and live broth cultures were fed to volunteers. The filtrates did not produce symptoms but living cultures did.

HEMOLYTIC STREPTOCOCCI FROM THE THROAT OF NORMAL YOUNG ADULTS: A. W. Frisch. Jour. Inf. Dis., vol. 62, No. 1, 1938, p. 41.

Survey of cultures of throats of normal college age adults showed Group A streptococci in 6.4%. The organisms were somewhat more common when tonsils had not been removed.

THE EFFECTS OF IRRADIATION ON THE NORMAL BLOOD CELLS AS DETERMINED BY THE BLOOD COUNT: K. Kornblum, F. Boerner and S. Henderson. Amer. Jour. Roent. and Rad. Ther., vol. 39, No. 2, Feb., 1938, p. 235.

A summary of a series of blood counts on patients receiving various roentgenological and radiological treatments shows that the irradiation had no significant effect on hemoglobin content or on red blood count.

Irradation produces a general reduction in the number of leucocytes affecting all types of leucocytes but most marked in lymphocytes. The counts generally required a period of five weeks to return to the normal values.

Attempts to raise the leucocyte count in irradiated patients by injecting materials that would cause a rise in the normal were unsuccessful but, no ill effects could be demonstrated as due to the irradiation leucopenia.

NOTE ON ERRORS IN THE ANALYSIS OF CHLORIDE IN ALBUMINOUS URINE: J. Sendroy, Jr. Jour. Biol. Chem., No. 120, 1937, p. 441.

A comparison of the accuracy of the Volhard and its variations, indicator adsorption, and iodate methods of estimating urine chloride is given. All except the iodate method are reported inaccurate in the presence of appreciable amounts of albumin or in specimens with low chloride content.

CLINICAL DATA CONCERNING CHRONIC PYELONEPHRITIS: W. F. Braasch. Jour. Urol., Vol. 39, Jan., 1938, p. 1.

A discussion of the types of organisms present and theories of origin of chronic pyelonephritis. Emphasis is placed on the necessity of cultures and Gram stains of sediment of urine as essential to intelligent treatment. The pH is also of value in therapy. Incidence of various organisms in a survey are given.

GAS CYSTS OF URINARY BLADDER: H. A. Levin. Jour. of Urol., Vol. 39, Jan., 1938, p. 45.

Discussion of the literature and report of a recovered case of Cystitis Emphysematosa B. coli and B. Welchi have been isolated. The condition is reported most likely to occur when the blood sugar is over 200 mgm.

THE MICRO-DETERMINATION OF UREA IN BLOOD AND OTHER FLUIDS: M. H. Lee and E. M. Widdowson. Biochem. Jour., Nov., 1937, p. 2035.

A colorimetric method for urea is given using Xanthydrol as the urea precipitant. The method is reported suitable for all concentrations of blood urea and for urine urea. The results are compared with those obtained by urease methods.

THE ESTIMATION OF ALBUMIN AND GLOBULIN IN BLOOD SERUM: I. ERRORS INVOLVED IN THE FILTRATION PROCEDURE: H. W. Robinson, J. W. Price and C. G. Hogden. Jour. Biol. Chem., 120, 1937, p. 481.

The authors discuss errors due to adsorption on filter papers of various types in solutions of varying concentrations in determining blood serum proteins. A modification for decreasing these errors is suggested.

ON THE RETENTION OF CHOLESTERIN AND ITS ESTERS IN THE BLOOD IN VARIOUS LIVER DISEASES: K. Kusue. Jour. Biochemistry, vol. 25, 1937, p. 461.

The author gives relative cholesterin and cholesterin ester values in various liver conditions with a view to their use as prognostic indications.

NEWS AND ANNOUNCEMENTS

REGISTRY OF MEDICAL TECHNOLOGISTS
OF THE
AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS

Five hundred and twenty-seven applications were filed for the April, 1938, examination. Four hundred and seventy-seven were approved and fifty were rejected. Three hundred and eighty-eight candidates were successful and received their certificates of qualification from the Board of Registry about July 1st.

WRITTEN QUESTIONS FOR EXAMINATION APRIL, 1938
(Maximum Time for Written Examination—3 hours)

IMPORTANT—Select 10 out of 12—DO NOT answer more than 10 questions.

1. a. List the cells included in Schilling's differential.
   b. State briefly principle involved in the fragility test.
2. a. Define:
      1. Normoblast.
      2. Megaloblast.
      3. Thrombocyte.
      4. Macrocytosis.
      5. Neutropenia.
   b. Give the values in per cent for the normal differential leukocyte count.
3. Outline one method for each of the following:
      1. Platelet count.
      2. Hemoglobin determination (give an acid hematin method).
      3. Reticulocyte count.
      4. Volume index.
4. What is the fundamental difference between leukocytosis and leukemia?
5. What is the difference between "relative" and "absolute" leukocytosis?

6. Give the normal values for the following constituents of the blood:
   1. Sugar.
   2. Cholesterol.
   3. Creatinine.
   4. Non-protein nitrogen.
   5. Chlorides.

7. a. What is the principle of the glucose tolerance test?
   b. Define (1) hypoglycemia, (2) hemolysis, (3) blood plasma, (4) blood serum, (5) anticoagulant.

8. a. Name three important pathological microscopic constituents of urine excluding crystals and epithelial cells.
   b. What procedures should be included in the examination of catheterized specimens of urine from the right and left kidneys?

9. Define (1) Glycosuria, (2) Hematuria, (3) Albuminuria, (4) Polyuria, (5) Pyuria.

10. Define (1) Antibody, (2) Antigen, (3) Toxin, (4) Agglutination, (5) Complement. (Do not give technique of any test.)

11. a. What is the reaction to Gram's stain of the following organisms:
    1. Neisseria gonorrheae.
    2. Streptococcus hemolyticus.
    3. Eberthella typhi.
    4. Staphylococcus aureus.
    5. Escherichia coli.

    b. What is the best culture medium for the following:
    1. Streptococcus hemolyticus.
    2. Corynebacterium diphtheriae.
    3. Eberthella typhi.

12. What organisms are used in agglutination tests for the following:
    1. Typhoid fever.
    2. Undulant fever.
    3. Typhus fever.

The closing date for the acceptance of October examination will be September 15th.

NATIONAL

The scientific program of the 67th Annual Meeting of the American Public Health Association in Kansas City, Mo., October 25-28, which will engage the attention of more than 3500 of the nation's health authorities, indicates how closely the organization's Program Committee has been following national trends in public health progress.

There is considerable emphasis on the five major diseases which are being attacked throughout the land with government funds. The grave problem of maternal and infant mortality receives its share of attention. A special session is devoted to a discussion of "Public Health Aspects of Medical Care" which it is expected will be one of the most significant of the entire conference, with exponents of the National Health Program, spokesmen for organized medicine and representatives of the newly-recognized medical consumers, the public, on the platform.

The recruiting and training of public health personnel for the specialized tasks the expansion of health services are creating and for which trained workers are seriously lacking is a major note in the varied program. The health department as a business organization is a new concept which will be treated by the special session method. Administrative procedures, accounting measures, including cost-accounting, will be considered. Many health departments are now on a parity with million-dollar enterprises and special techniques and formulae for the conduct of the big business of public health are definitely needed.

More than 400 papers and reports will be presented and discussed in the four days the public health profession is in convention. The delegates are drawn from every state in the Union, from Canada, Cuba and Mexico and from every branch of public health practice. This makes necessary many individual meetings of the Association's ten sections—Health Officers, Laboratory, Vital Statistics, Public Health Engineering, Industrial Hygiene, Food and Nutrition, Child Hygiene, Public Health Education, Public Health Nursing and Epidemiology—where rock-bottom topics of interest to specialists alone are talked about, and in addition, sessions involving two or more Sections where subjects of broader import cut across the lines of the Section organization. A number of symposia will bring together three and four of these divisions on such subjects as The Phosphatase Test in the Control of Milk Pasteurization; The Use of Biological Products; Water and Sewage; Frozen Desserts; Typhoid Fever; Pertussis; Nutritional Problems; Industrial Hygiene.

Included among the speakers are such nationally known leaders as Dr. Thomas Parran, Dr. Arthur McCormack, Dr. Abel Wolman, Dr. E. V. McCollum, Dr. Robert S. Breed, Dr. Elliott S. Robinson, Professor C.-E. A. Winslow, Dr. I. S. Falk, Dr. Haven Emerson, Dr. Nina Simmonds, Dr. William F. Snow, Major Joel I. Connolly, Mr. J. J. Bloomfield, Dr. Walter H. Eddy, Miss Dorothy Deming, Dr. Reuben L. Kahn, Mr. Sol Pincus, Dr. Martha M. Eliot, Dr. Samuel C. Prescott, Dr. Bruce H. Douglas, Dr. Edward S. Godfrey and many others.

The following organizations are meeting with the American Public Health Association and have prepared programs equally timely and important:

American School Health Association.
Conference of State Laboratory Directors.
Conference of State Sanitary Engineers.
International Society of Medical Health Officers.
American Association of State Registration Executives.
Association of Women in Public Health.

Pennsylvania

A Technicians' Institute was given under the auspices of Temple University School of Medicine, Phila., Penna, April 11, 12 and 13, 1938. Technicians from the states of Penna., New Jersey and Delaware were invited.

The first two days of the Institute were devoted to papers prepared and read by the faculty of Temple University School of Medicine, Hahnemann Medical School, Jefferson Medical School and the Medical School of the University of Penna.

Sessions were held both morning and afternoon during the first two days and were followed by a dinner session held the evening of the second day. The dinner was given at Kugler's Restaurant, Phila. All questions during the meetings were written and were placed in a box which were answered at the dinner by the faculty members who were seated at the speakers' table. Dr. John A. Kolmer presented the speakers.

The third day was devoted to demonstrations of apparatus and technic held in Temple University School of Medicine and the Medical School of the University of Penna. The demonstrations were repeated at scheduled intervals so that everyone could visit all the laboratories.

Dr. Kolmer, who planned the program, called on members of the Penna. Society of Medical Technologists to serve on committees with his staff.

There were about 250 technicians registered and about 200 attended the dinner session.

It was indeed a privilege to hear the most experienced men present their subjects. "A Post Graduate Course in Medical Technology" would be a fitting name for these sessions.

A request has been received for No. 1-A, Volume 1, 1935, of the Bulletin of the A. S. C. L. T. Any person having a copy of this issue and willing to dispose of same, please notify the Administrative Office.

Minutes of the Executive Sessions of the Sixth Annual Convention of the American Society of Medical Technologists held at Young Men's Institute Building, San Francisco, Cal., June 13-14-15, 1938

(Continued from Volume 4, No. 5, July, 1938)

The report of the Counsellors was then read by Miss Stanley in the absence of Mr. Harry Macko, Chairman. During the year the Counsellors have tried to stimulate the interest of registered medical technologists in our Society and also in forming state societies. Miss Stanley moved that the report be accepted as read. The motion was seconded by Mrs. Seguin and carried. A copy of this report is on file. Mr. Fitzgerald suggested that the effectiveness of the Counsellors might be more marked if there were a larger number. He felt that five for the entire country were not sufficient. The President said his suggestion would be taken into consideration.

The Treasurer's report was read by Miss Hermine Tate, Treasurer. The balance on hand July 6, 1937, was $356.31. Deposits during the year amounted to $2,244.81. Expenditures during the year amounted to $1,756.03. The balance on hand May 31, 1938, was $845.09. Mrs. Seguin made a motion that the report be referred to the Executive Committee. The motion was seconded by Miss Elliott. Miss Ward explained that the Executive Committee is responsible for all the financial affairs of the Society. Miss Stanley suggested that since the Chairman of the Executive Committee approved of the Treasurer's report in her report that this motion be voted down and another be made to approve the report. Mrs. Seguin withdrew her motion. The second was withdrawn. Miss Stanley made a motion that the report be accepted. This motion was seconded and carried. A copy of this report is on file.

A report of Local Arrangements was given by Mr. Arthur T. Brice, Chairman. This Committee was successful in all of its objectives except that of reservation of hotel rooms. This was

found to be impossible as a result of failure to cooperate on the part of the Housing Committee of the California Medical Association and labor difficulties among the hotel employes in San Francisco. Mr. Brice moved the adoption of this report. Mr. Conlin suggested an addition to this motion of a vote of thanks. This motion was seconded by Miss Stanley and carried. A copy of this report is on file.

An informal reception at the Army-Navy Club for Monday evening was announced by Mr. Brice. Local pathologists, societies, and members of the Registry Board have been invited. It was also announced that a joint meeting of the two local societies, The East Bay Association of Medical Laboratory Technicians, and the San Francisco Association of Medical Laboratory Technicians would be held Monday evening with Dr. R. L. Kahn, of Cleveland, Ohio, as the guest speaker to which those attending the convention were invited. Miss Stanley suggested that the Society go on record as accepting this invitation and that the Secretary acknowledge same at the proper time.

An invitation to visit the Mt. Sinai Hospital was given by Miss Ward for Dr. Charles Weiss.

An invitation to visit the Army Hospital at the Presidio was given by Miss Stanley for Col. Gart.

The report of the Program Committee was given by Miss Bernice Elliott, Chairman. Her motion that the report be accepted was seconded by Mr. Brice and carried. A copy of this report is on file.

The President suggested that new business be deferred until later. Mr. Conlin moved that the meeting be adjourned and new business be taken up on Wednesday. This motion was seconded by Miss Stanley and carried.

MONDAY AFTERNOON, JUNE 13, 1938:

Miss Henrietta Lyle of Pennsylvania presided and opened the meeting at 2:00 p. m. The program followed that printed in the program with two minor exceptions. Miss Mylah Tom of Austin, Texas, read Miss Baker's paper and Mr. William A. Hewitt of the University of California read Mr. Williamson's paper.

Miss Ward took the chair and announced the following committees:

Nominating Committee:—Miss Lyle of Lancaster, Pennsylvania, Chairman; Mrs. Seguin of Niles Center, Illinois; Sr. M. Jeanette Bodoh of Hays, Kansas; Mrs. Jones of Utica, New York and Miss Spoonar of Everett, Washington.

Resolutions Committee:—Miss Strang of Covina, California,

Chairman; Miss Skidmore of Tulsa, Oklahoma, and Miss Shevsky of Hartford, Connecticut.

Awards Committee:—Dr. Ikeda of St. Paul, Minnesota; Dr. Maynard of Pueblo, Colorado and Miss Zoll of Philadelphia, Pennsylvania.

The President then brought to our attention the Humane Pound Act of the State of California which is pending. She was asked to do this by Mr. Benedict of the California State Society for the Promotion of Medical Research. She asked that we, as a scientific society, consider expressing our opinion to help defeat it. Miss Lyle felt that it was a local political issue and that being a national society we should not express an opinion. Mr. Brice and Miss Elliott felt we should. Miss Ward explained that we could approve either by personal signatures or the society as a whole. Dr. Maynard told us that the American Society of Clinical Pathologists had passed a resolution as a society and members had signed personally, that it was one of forty-some societies going on record against the act. Mr. Brice made a motion that a resolution be passed against the Humane Pound Law of the State of California. This motion was seconded by Miss Bernice Elliott and carried. The meeting was adjourned.

TUESDAY MORNING, JUNE 14, 1938:

The scientific meeting opened at 9:00 a. m. with Sr. M. Jeanette Bodoh of Kansas presiding.

The program followed that printed with the exceptions that Miss Callan's paper was read by Miss Marion Gianniny and Dr. Lattimore's paper was postponed until Wednesday.

WEDNESDAY MORNING, JUNE 15, 1938:

The meeting opened at 9:00 a. m. with Miss Dorothea Zoll of Pennsylvania presiding. The program was slightly changed from that printed.

Dr. Lattimore delivered his paper which was to have been given on Tuesday.

The Nominating Committee report was given by Miss Henrietta Lyle of Lancaster, Pennsylvania. The Committee presented the following ballot:

President-Elect—Gladys Eckfeldt, New Jersey; Bernice Elliott, Nebraska.

Vice-President—Arthur Coad, California; Marion Gianniny, Pennsylvania.

Secretary—Lucille Brown Wallace, Oklahoma; Doris Bowman, New York.

Executive Board (vote for two)—Ann Snow, Arkansas; Arthur Brice, California; Pauline Dimmitt, Texas; Sr. M. Irmina Olds,

Missouri.

Advisory Board—Laura Bates, Wisconsin; Frieda Ward, New Jersey.

A film on Psittacosis was shown through the courtesy of the University of California Hooper Foundation, San Francisco, California.

The meeting adjourned to reconvene at 1:30 when the last two scientific papers, those of Miss Stanley and Mr. Brice, would be presented.

WEDNESDAY AFTERNOON, JUNE 15, 1938:

When the afternoon session opened Miss Zoll presided during the reading of the last two scientific papers.

Miss Ward then took the chair and asked the guests to withdraw as the following meeting was to be a closed one. Unfinished business was called for.

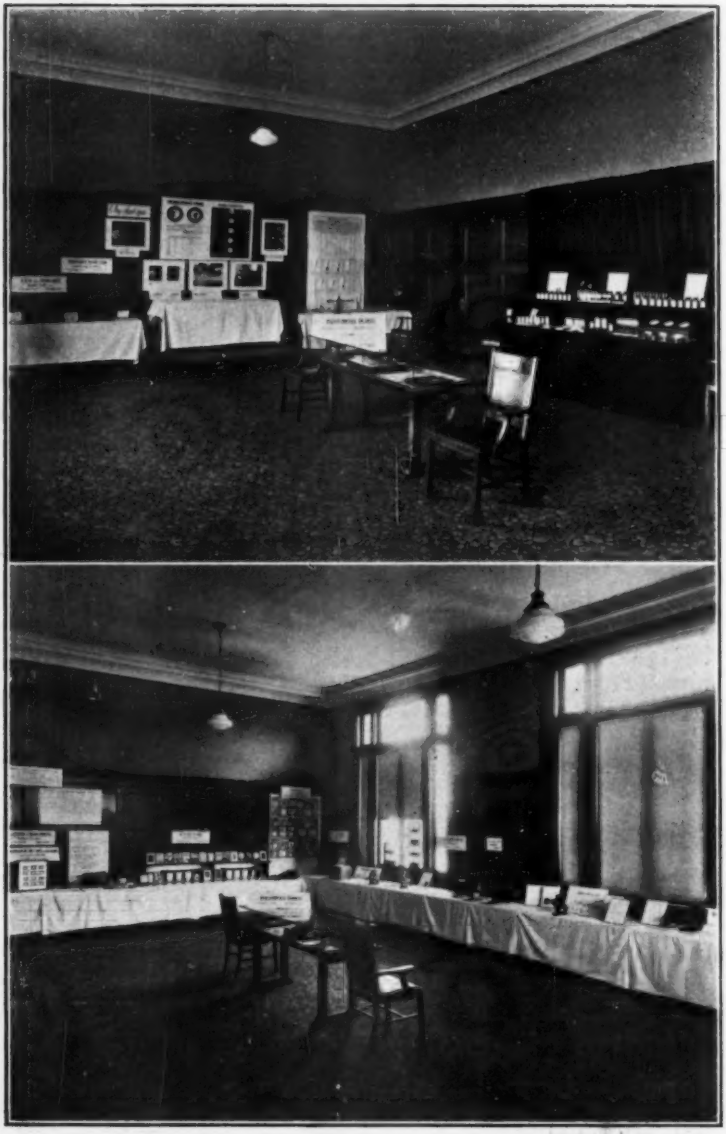
The report of the Scientific Exhibits Committee was read by Miss Mary Gorgas, Chairman. A summary of the results of the questionnaire concerning exhibits was embodied in the report. This will be of value to the Scientific Exhibits Committee for the next few years as one question was "In what year do you propose to submit your first exhibit?" and there were a number of definite replies.

Twenty exhibits are on display including the first one from a foreign country.

The Committee recommended the following: (1) That a sum of money be placed at the disposal of the Chairman of scientific exhibits; (2) That a committee of one or more be appointed by the president to publish the activities of the Society from time to time for the benefit of non-members; (3) That each year at least one member with previous experience in scientific exhibit committee work be asked to serve and (4) That letters of thanks be mailed by the Secretary to the following for their kind contributions: Dr. Carl Meyers and Dr. H. Johnstone of the University of California; Dr. Frank Tose of the Academy of Science, Golden Gate Park; Mr. Raymond Betka, Spencer Lens Company; Mr. Bosque, Manager of the Young Men's Institute Building; and Dr. Giffin and Miss Ruth Spore of Assuit, Egypt.

Miss Gorgas thanked Mr. Brice for his help.

Miss Skidmore made a motion that the report be accepted as read. It was seconded. Miss Stanley felt that the report should not be accepted because that would approve the suggestions. After a discussion concerning this Miss Ward referred to Roberts' Rules of Order. It was learned that if the report was accepted as read the incoming officers could use the suggestions or not as they desired



EXHIBITS A. S. M. T. SESSION SAN FRANCISCO, JUNE, 1938

Mr. Fitzgerald asked for the question. The motion was carried. A copy of this report is on file.

The reports of special committees were called for.

The President explained that the Awards Committee report is traditionally given at the banquet.

The report of the Resolutions Committee was given by Miss Strang, Chairman, who moved the adoption of the report. It was seconded by Mr. Fitzgerald and carried. A copy of this report is on file.

The report of the Publicity Committee was given by Mr. J. William Fitzgerald, Chairman. The Committee interviewed the local papers and the American Medical Association Bulletin, all of whom received programs and notes of daily events.

At this time new business was called for.

Miss Stanley made a motion that Dr. Alice E. Evans, D.Sc., M.D., Senior Bacteriologist, United States Public Health Service, be given honorary membership in this Society. The motion was seconded by Miss Skidmore. At this present time the members were counted to be sure a quorum was present which was found so. The motion was carried unanimously.

(To be continued in November issue of Journal, Vol. 4, No. 6)